EDUCATING THE LAS VEGAS COMMUNITY ABOUT STORM WATER POLLUTION

Betty Hollister, APR
Clark County Regional Flood Control District
Las Vegas, Nevada

Abstract

The Clark County Regional Flood Control District, located in Las Vegas, Nevada, is the umbrella agency that administers the region's National Pollutant Discharge Elimination System (NPDES) permit. While the majority of the District's outreach efforts have been focused on flood safety education, the District has moved forward with increased public outreach about urban runoff and storm water pollution in the last two years. The Las Vegas Valley drains to the Las Vegas Wash, which drains to Lake Mead, the area's primary source of drinking water. With more than 6,000 new residents moving to the community each month, the education process about flood safety and storm water quality are continuous. New and innovative measures are needed to provide multiple impressions and reminders to the community about the impact their behavior can have on the environment.

Background

The current population of the Las Vegas Valley is 1.5 million, with only 24% of those residents being born in Nevada. An average of 6,000 new residents move to the Valley each month, making Las Vegas one of the fastest growing cities in the nation. Almost one-half of the area's residents have lived in Las Vegas less than 10 years, and one-third of those have lived in the Valley less than five years (Las Vegas Perspective, 2002). To put this growth into perspective, in 1950 the city's population was 47,000, and every 10 years since, the population has doubled. The area is experiencing all of the challenges associated with other major metropolitan areas. In addition, the arid desert climate and drought conditions facing many of the western states make water quality and water availability major concerns for the area.

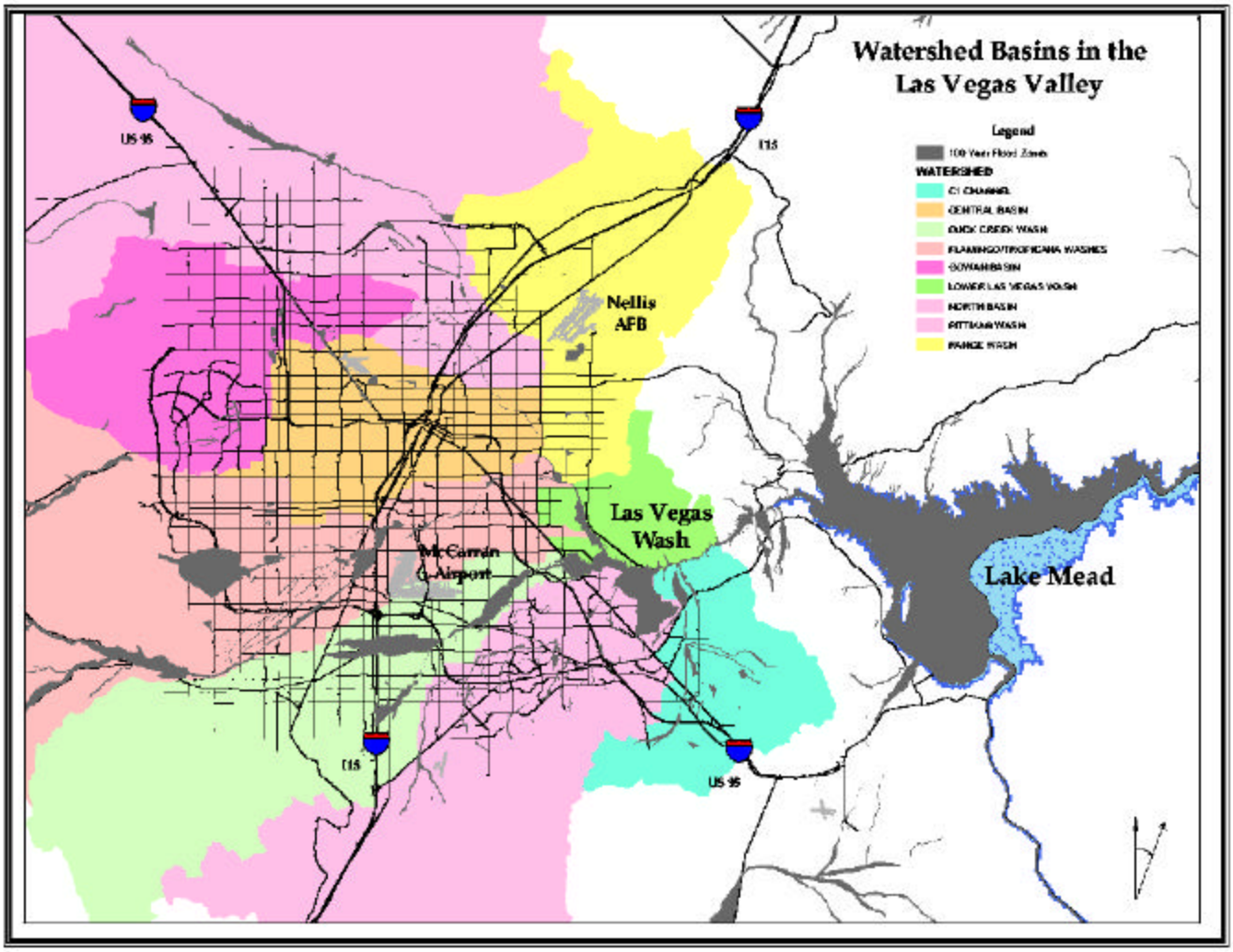

Figure 1 Las Vegas Valley Watersheds

The average annual rainfall for Las Vegas is approximately 4 inches. However, in 2002, the area received less than 1.5 inches of rain (Historical Rainfall Data, 2002). The geography of the Valley slopes from the west to east with seven major washes passing through the urban area (Figure 1). All of these washes converge on the east side of town at the Las Vegas Wash, which drains to Lake Mead, the area's primary source of drinking water. Five percent of the flow through the Las Vegas Wash into Lake Mead is from storm water; 5% is from over-irrigation, surface and groundwater; the remaining 90% is highly treated wastewater.

In accordance with the Federal Water Pollution Control Act, the Clark County Regional Flood Control District, as lead agency, was granted a National Pollutant Discharge Elimination System (NPDES) permit in December 1990. The Nevada Division of Environmental Protection issued the permit to six co-permittees representing the various city, county and state agencies owning and operating municipal separate storm sewer systems in the Las Vegas Valley.

The Storm Water Quality Management Committee was formed with the Regional Flood Control District as the umbrella organization funding the majority of storm water activities, like dry and wet weather testing of water entering Lake Mead through the Las Vegas Wash. Public outreach activities until recently were limited primarily to environmental "fairs" like Earth Day events. With the addition of a Public Information Manager in 2000, the Regional Flood Control District placed more emphasis on public outreach and education about storm water quality.

Research

An initial brainstorming session was held with members of the Storm Water Quality Management Committee to determine the focus each of these organizations hoped to take with the outreach efforts. From this two-hour session, it became clear that this group of 20 people had differing opinions about the content of the information campaign and the target audiences to be reached.

Mall Intercept Survey

An informal survey was taken at the area's three largest shopping malls to determine residents' awareness level of the problem. While this was a non-scientific survey, it was hoped the results would point the communication efforts in a certain direction.

After surveying 150 residents, the results showed that approximately 50% of the respondents were not aware that floodwater and urban runoff flowed through the storm drain network untreated to Lake Mead. Discussions also showed that residents were unaware of proper disposal of various pollutants, especially how to drain their swimming pool. Most of those surveyed were aware that Lake Mead was the Valley's primary source of drinking water.

By partnering with the Southern Nevada Water Authority the following year, the District was able to include two questions on their next telephone survey of residents at no charge. These questions were similar to the mall intercept questions and the results were also similar. While 71% of respondents knew Lake Mead was the area's primary source for drinking water, 32% said they believed urban runoff was treated before entering the Las Vegas Wash and Lake Mead. Thirteen percent did not know. From this survey, it was determined that the first step in public outreach should be education about untreated runoff and stormwater.

Figure 2 Storm Water Logo

Website/Logo Creation

Other environmental websites were researched and evaluated. Information was compiled and edited using information from several sources. A member agency staff person agreed to construct a storm water website as a volunteer service. The Regional Flood Control District paid registration costs associated with the site. The logo that was used prior to the website creation did not clearly communicate that water flowing through storm drains was untreated. The committee, with permission, modified a logo from a California community so that it better represented the Las Vegas environment. (Figure 2).

Lesson Learned: Research, evaluate, coordinate and borrow ideas (with permission). Feel free to borrow any of our ideas at http://www.lvstormwater.com/. We were also fortunate to have a volunteer Webmaster who is highly capable and dedicated to the effectiveness and accuracy of our site.

Public Service Announcements

The primary objective of our mall intercept survey was to first educate the community that urban runoff and storm water are not treated before entering Lake Mead. The concept of a toy boat floating through gutter water, falling into a storm drain and being "found" in Lake Mead was used. The 30-second spot was produced at no charge by Clark County's Communication Team who operate the county's government access station. They were enthusiastic about producing a commercial that allowed a large amount of creativity and clever camerawork. An award-winning public service announcement (PSA) resulted that has received five first-place local and national awards.

Lesson Learned: While the Toy Boat spot was clever and award winning, it had no news or event hook for the television stations. Each of our local network affiliate stations are bombarded with about 35 new public service announcements each month, many of which are tied to an event or are co-sponsored by the TV station. Consequently, the Toy Boat PSA saw very little airtime. The District recognized that the next PSA must have some "hook" for it to be used by the media.

The District also explored producing 10 or 15 second spots but learned that there are only so many "natural" breaks of these shorter time slots with the network affiliates – that would have limited even more the possibility of airtime. In addition, production costs would have been essentially the same.

Two other public service announcements were produced following the Toy Boat educational spot. Each PSA was produced at a negotiated rate of $2,300. These spots focused on behavior changes that could help improve the quality of urban runoff and storm water. One pointed out proper fertilization and irrigation of landscaping and was distributed in April to coincide with the Las Vegas Valley Water District's water conservation campaign. This PSA was aired by all three network affiliates in both April and May, 2002. The "hook" was two-fold: 1) The fertilizer/irrigation PSA was distributed in the Spring during a time when people begin working in their yards, and 2) The Las Vegas Valley Water District's water conservation campaign (paid advertising) was running heavily during this time.

Only one television station in Las Vegas provides documentation of PSA airtime, KVVU-Fox 5. With a program called PR-Trak, the District was able to document – just from this one station – that the fertilizer spot aired 70 times in a two-month period and was viewed by several hundred thousand people. This program uses actual Neilson ratings for individual markets. This program is also helpful in summarizing media coverage, both quantitative and qualitative, and provides accountability for the communications effort.

The third PSA focused on proper disposal of pet waste and was distributed in June. Knowing that the news or event "hook" was missing, television advertising departments were contacted about placement of the spot as a commercial. A "bonus" schedule was agreed to that gave free and extra placement of the spot in July for paid time in June. A competitive advertising rate request (Request for Avails) was conducted to ensure the best available television schedule, ratings and prices. Each of the three stations received $3,000 from the Regional Flood Control District.

All three PSAs can be viewed from the www.lvstormwater.org website.

Homeowners' Associations

A one-page camera-ready article was produced and mailed to a database of 300 Homeowners' Associations. A cover letter from the Storm Water Quality Management Committee explained the importance of educating the community about how they could help protect Lake Mead, which is our primary source for drinking water. The same article was also sent to the neighboring cities and county for inclusion in newsletters they mail to residents.

Lessons Learned: The one-page camera-ready article was apparently not widely used by the Homeowners' Associations. The District received seven phone calls thanking it for the information, but did not put in place a method to secure a copy of the next newsletter from each Association. While the text and layout were standard and "ready-to-use," it appears that personal phone calls to the major associations may have worked to build better response than just a blind mailing. The article was, however, widely used in the newsletters produced by the cities and county. The District also revised the text of the article to focus on business best management practices and sent the mailing to related businesses. In response to this mailing, 11 businesses called to discuss concerns they had regarding their policies and to ensure that they were in compliance. The District plans to work with Homeowners' Associations again in the spring of 2003. This will coincide with new and more expensive watering rates that go into effect along with stricter water conservation guidelines and citations.

Figure 3 Storm Drain Plaques

Storm Drain Markers

Various types of markers were evaluated based on the hot, desert climate. A plastic version was chosen that used a special adhesive. A $65,000 grant from the state and the local conservation district funded the purchase of 12,000 plaques (along with other collateral material) to be distributed to the five city and county entities (Figure 3).

Lesson Learned: The funding did not include the installation of the plaques. The job for installation fell on the Public Works/Maintenance Departments to "fit in" as they had time. After a year, only a few hundred plaques had been installed in violation of the terms of the grant. Meetings were held to determine alternative ways of installation. Because of the toxic nature of the glue and liability issues (some students had been killed while picking up trash on a roadside), the only alternative was to contract the job out or seek direction from top management. A combination of the two was used with the Regional Flood Control District assisting with contract labor costs. All the storm drain makers were placed by December 2002.

The Flood Channel Television Program

The District produces six 30-minute television programs each year under consultant contract for $15,000 per episode. Two programs in the last 1½ years were devoted to storm water quality – education and behavior change. Several awards were received for the "Protecting the Environment" episode. These programs air on our two local government access television stations and receive about 40 airings each month. The County Government Access Station (C-4) airs its programming on the Internet via the county's website, www.co.clark.nv.us. The Flood Channel television program can be viewed from the county's website.

Lessons Learned: Segments of the program educated the community about environmentally friendly businesses and the actions they were taking to conserve and protect the environment. Other segments showed what actions residents could take to improve water quality. The interviews with businesses were difficult to obtain because they were reluctant to go on camera – perhaps they were not doing all they could do or were afraid of repercussions from regulators. These companies included pool cleaners, carpet cleaners, mobile dog groomers, automotive service and car washes. With the second environmental episode, the District made the initial phone calls using public relations contacts and other relationships built over the years.

Figure 4 Bus Stop Shelter Ad

Bus Stop Shelter Ads

The City of North Las Vegas received a grant for public outreach about storm water quality. It chose to focus on proper disposal of pet waste as a reinforcement of the public service announcements. The city produced 25 bus stop shelter posters (Figure 4) that were in place from September through December 2002 (four months). The size of the posters was 4 feet by 6 feet. Total cost of artwork, production and placement was $8,000. A similar version of this message was also distributed to North Las Vegas residents via utility bills one month prior to the bus stop shelter posters being put in place.

Lessons Learned: The artwork for this effort was incredibly eye-catching. An out of focus woman held a bag of pet waste (in focus) with the words "Do Your Doody" written on the bag. The sub-heading was "Protect the Environment" (our tag line for all the PSAs) and the words "Pick Up After Your Pet." While the District did not receive any feedback from residents, those associated with the campaign were really grabbed by the artwork. One change would be to downplay the woman's fingernails (they were emphasized

in such a way that they distracted from the pet waste bag). A copy of the artwork is also on the www.lvstormwater.com website.

Brochures

The District is currently finalizing a best management practices brochure for those wash water and urban runoff related businesses seeking new licenses. This two-color brochure was created with simple graphics and examples of various low to high impact activities. Funding for this effort was shared with the Southern Nevada Water Authority. A limited number of brochures are being printed (5,000) and an evaluation of its success will determine if more should be produced and if any revisions are needed. A copy of the brochure is available on the www.lvstormwater.com website.

Lessons Learned: Because this was a committee effort, with many agencies and government entities involved, the process of producing this brochure took about six months. The committee met once a month. Additional reviews were required for every suggested change. Moreover, one entity would suggest a change that was not in agreement with the regulations of another community, which would necessitate further changes. Because of such difficulties, the committee decided to print and distribute only a limited number of copies.

Community Events and Collateral Material

The Regional Flood Control District takes part in spring and summer environmental fairs, as well as events geared toward pet owners. The District has produced several collateral materials for distribution: pet food lids, pooper scoopers, sponges, stickers and coloring books to name a few. It also uses an enviroscape model (a landscape topographical model) that shows how various pollutants are carried by rainwater into a lake. These are all helpful in getting the message out about storm water quality.

Lessons Learned: It is best to participate in smaller, organized events that provide the crowd a schedule of when demonstrations (like with the enviroscape) will be held. This allows for coordinated presentations with better audience participation. While brochures are a standard in these events, we believe that focusing our participation helps to more effectively get the message out.

School Outreach

A four-page school curriculum was produced after a year of research to determine how much information was needed and in what format. The curriculum focuses mainly on flood safety, but storm water and the pollutants it contains are also included. Personal school presentations last year reached 45 schools and approximately 8,000 elementary students. As requested by teachers, the material was also mailed to schools, reaching 15,000 additional elementary students. A six-minute video and student activity book were also included.

Lessons Learned: The research was crucial to ensuring that the curriculum met both local and state education requirements. The curriculum met both science standards and health and safety requirements. Four pages of teacher information, a student test and teacher evaluation helped ensure teachers' use of the material and gave the District immediate feedback. From the feedback, the District saw a need to produce the video in Spanish for schools with higher populations of non-English speaking students. The District also included an interactive version of the activity book on its website at www.ccrfcd.org.

Conclusion

Because of the tremendous growth the Las Vegas Valley has been experiencing, the District's two major audiences are new residents and construction companies. The Nevada Division of Environmental Protection is stepping up enforcement of construction best management practices in Las Vegas and the District will be assisting them with their education efforts. The District is also exploring the next focus of its Public Service Announcements. One possible topic is boating on Lake Mead, because of new regulations restricting certain types of watercraft on the lake.

Currently, three sanitation districts discharge highly treated wastewater into the Las Vegas Wash that flows into Lake Mead. The sanitation districts contribute approximately 90% of the annual flow in the Las Vegas Wash. The sanitation districts are now considering systematically eliminating their Las Vegas Wash discharges by piping their flows farther into the lake or to the Colorado River. If and when this occurs, the capacity for dilution of urban runoff and storm water pollutants in the Las Vegas Wash will be decreased, thus resulting in greater concentrations of these pollutants as they reach Lake Mead. While the various agencies involved with the Wash are building grade control structures and wetlands in the Lower Las Vegas Wash to help improve water quality, the District continues to evaluate how to most effectively educate the public on behavioral changes that have positive impacts on the environment.

References

Historical Rainfall Data, 2002, www.ccrfcd.org compiled from the National Weather Service official gage at McCarran International Airport.

Metropolitan Research Association, 2002, Las Vegas Perspective.